

L Number	Hits	Search Text	DB	Time stamp
5	2979	((electrophoretic\$2 (electro near2 phoretic\$2)) near5 (medium composition solution))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/15 13:12
7	13	((electrophoretic\$2 (electro near2 phoretic\$2)) near5 (medium composition solution)) ) and (pigment with (crosslink\$3 (cross adj2 link\$3) bond\$3) with (polymer))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/15 13:10
8	27	((electrophoretic\$2 (electro near2 phoretic\$2)) near5 (medium composition solution)) ) and ((desorb\$4 desorp\$4) same charge)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/15 13:12
9	2	((electrophoretic\$2 (electro near2 phoretic\$2)) near5 (medium composition solution)) ) and ((desorb\$4 desorp\$4) same charge)) and pigment	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/15 13:11
12	4776	((electrophoretic\$2 (electro near2 phoretic\$2)) with (medium composition solution))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/15 13:12
13	30	((electrophoretic\$2 (electro near2 phoretic\$2)) with (medium composition solution)) ) and ((desorb\$4 desorp\$4) same charge)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/15 13:12
14	3	((electrophoretic\$2 (electro near2 phoretic\$2)) with (medium composition solution)) ) and ((desorb\$4 desorp\$4) same charge)) and pigment	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/07/15 13:32

21	71	(((electrophoretic\$2 (electro near2 phoretic\$2)) near5 (medium composition solution)) ) and (((H0001828 or "6473072" or "6459418" or "6445489" or "6413790" or "6398858" or "6392786" or "6377387" or "6376828" or "6327072" or "6323989" or "6312971" or "6312304" or "6300932" or "6271823" or "6262833" or "6262706" or "6252564" or "6249271" or "6241921" or "6235829" or "6232950" or "6225971" or "6221143" or "6215920" or "6197883" or "6191225" or "6184856" or "6177921" or "6162882" or "6153705" or "6144361" or "6137012" or "6130774" or "6130773" or "6124851" or "6124411" or "6121371" or "6120839" or "6120588" or "6118426" or "6117368" or "6113810" or "6111022" or "6103380" or "6071980" or "6069205" or "6068688" or "6067185" or "6064784").pn.) (("6055091" or "6025896" or "6017584" or "5986015" or "5968243" or "5964935" or "5961804" or "5958999" or "5945491" or "5932633" or "5930026" or "5922118" or "5914806" or "5895522" or "5885335" or "5872552" or "5851280" or "5837045" or "5807937" or "5803959" or "5789487" or "5783614" or "5763548" or "5753763" or "5747562" or "5745094" or "5714993" or "5713988" or "5707738" or "5707432" or "5698016" or "5672198" or "5643673" or "5627561" or "5604070" or "5575845" or "5573711" or "5571311" or "5554739" or "5545504" or "5543219" or "5498674" or "5467217" or "5411656" or "5403518" or "5380362" or "5360689" or "5298833" or "5281261" or "5279773").pn.) (("5066559" or "4985329" or "4946509" or "4902570" or "4892607" or "4891245" or "4888309" or "4877698" or "4846893" or "4810305" or "4772103" or "4690749" or "4680103" or "4665107" or "4661408" or "4594271" or "4530961" or "4476210" or "4314013" or "4298448" or "4285801" or "4273672" or "4273422" or "4164365" or "4113362" or "4093534" or "4001140" or "3892568" or "3870517" or "3792308" or "3767392" or "3756693" or "3668106" or "3639133" or "2800457" or "20020180687" or "20020171910" or "20020154382" or "20020145792" or "20020131147" or "20020130832" or "20020113770" or "20020106847" or "20020090980" or "20020063677" or "20020063661" or "20020060321" or "20020053900" or "20020021270" or "20020019081" or "20010045934").pn.))	USPAT; US-PGPUB	2004/07/15 13:33
----	----	--	--------------------	------------------

22	1	<p>(((electrophoretic\$2 (electro near2 phoretic\$2)) near5 (medium composition solution)) ) and (pigment with (crosslink\$3 (cross adj2 link\$3) bond\$3) with (polymer))) and (((electrophoretic\$2 (electro near2 phoretic\$2)) near5 (medium composition solution)) ) and (((H0001828 or "6473072" or "6459418" or "6445489" or "6413790" or "6398858" or "6392786" or "6377387" or "6376828" or "6327072" or "6323989" or "6312971" or "6312304" or "6300932" or "6271823" or "6262833" or "6262706" or "6252564" or "6249271" or "6241921" or "6235829" or "6232950" or "6225971" or "6221143" or "6215920" or "6197883" or "6191225" or "6184856" or "6177921" or "6162882" or "6153705" or "6144361" or "6137012" or "6130774" or "6130773" or "6124851" or "6124411" or "6121371" or "6120839" or "6120588" or "6118426" or "6117368" or "6113810" or "6111022" or "6103380" or "6071980" or "6069205" or "6068688" or "6067185" or "6064784").pn.) (("6055091" or "6025896" or "6017584" or "5986015" or "5968243" or "5964935" or "5961804" or "5958999" or "5945491" or "5932633" or "5930026" or "5922118" or "5914806" or "5895522" or "5885335" or "5872552" or "5851280" or "5837045" or "5807937" or "5803959" or "5789487" or "5783614" or "5763548" or "5753763" or "5747562" or "5745094" or "5714993" or "5713988" or "5707738" or "5707432" or "5698016" or "5672198" or "5643673" or "5627561" or "5604070" or "5575845" or "5573711" or "5571311" or "5554739" or "5545504" or "5543219" or "5498674" or "5467217" or "5411656" or "5403518" or "5380362" or "5360689" or "5298833" or "5281261" or "5279773").pn.) ("5066559" or "4985329" or "4946509" or "4902570" or "4892607" or "4891245" or "4888309" or "4877698" or "4846893" or "4810305" or "4772103" or "4690749" or "4680103" or "4665107" or "4661408" or "4594271" or "4530961" or "4476210" or "4314013" or "4298448" or "4285801" or "4273672" or "4273422" or "4164365" or "4113362" or "4093534" or "4001140" or "3892568" or "3870517" or "3792308" or "3767392" or "3756693" or "3668106" or "3639133" or "2800457" or "20020180687" or "20020171910" or "20020154382" or "20020145792" or "20020131147" or "20020130832" or "20020113770" or "20020106847" or "20020090980" or "20020063677" or "20020063661" or "20020060321" or "20020053900" or "20020021270" or "20020019081" or "20010045934").pn.)))</p>	USPAT; US-PGPUB	2004/07/15 13:33
----	---	--	--------------------	------------------

20	150	((H0001828 or "6473072" or "6459418" or "6445489" or "6413790" or "6398858" or "6392786" or "6377387" or "6376828" or "6327072" or "6323989" or "6312971" or "6312304" or "6300932" or "6271823" or "6262833" or "6262706" or "6252564" or "6249271" or "6241921" or "6235829" or "6232950" or "6225971" or "6221143" or "6215920" or "6197883" or "6191225" or "6184856" or "6177921" or "6162882" or "6153705" or "6144361" or "6137012" or "6130774" or "6130773" or "6124851" or "6124411" or "6121371" or "6120839" or "6120588" or "6118426" or "6117368" or "6113810" or "6111022" or "6103380" or "6071980" or "6069205" or "6068688" or "6067185" or "6064784").pn.) ("6055091" or "6025896" or "6017584" or "5986015" or "5968243" or "5964935" or "5961804" or "5958999" or "5945491" or "5932633" or "5930026" or "5922118" or "5914806" or "5895522" or "5885335" or "5872552" or "5851280" or "5837045" or "5807937" or "5803959" or "5789487" or "5783614" or "5763548" or "5753763" or "5747562" or "5745094" or "5714993" or "5713988" or "5707738" or "5707432" or "5698016" or "5672198" or "5643673" or "5627561" or "5604070" or "5575845" or "5573711" or "5571311" or "5554739" or "5545504" or "5543219" or "5498674" or "5467217" or "5411656" or "5403518" or "5380362" or "5360689" or "5298833" or "5281261" or "5279773").pn.) ("5066559" or "4985329" or "4946509" or "4902570" or "4892607" or "4891245" or "4888309" or "4877698" or "4846893" or "4810305" or "4772103" or "4690749" or "4680103" or "4665107" or "4661408" or "4594271" or "4530961" or "4476210" or "4314013" or "4298448" or "4285801" or "4273672" or "4273422" or "4164365" or "4113362" or "4093534" or "4001140" or "3892568" or "3870517" or "3792308" or "3767392" or "3756693" or "3668106" or "3639133" or "2800457" or "20020180687" or "20020171910" or "20020154382" or "20020145792" or "20020131147" or "20020130832" or "20020113770" or "20020106847" or "20020090980" or "20020063677" or "20020063661" or "20020060321" or "20020053900" or "20020021270" or "20020019081" or "20010045934").pn.)	USPAT; US-PGPUB	2004/07/15 13:34
19	51	("5066559" or "4985329" or "4946509" or "4902570" or "4892607" or "4891245" or "4888309" or "4877698" or "4846893" or "4810305" or "4772103" or "4690749" or "4680103" or "4665107" or "4661408" or "4594271" or "4530961" or "4476210" or "4314013" or "4298448" or "4285801" or "4273672" or "4273422" or "4164365" or "4113362" or "4093534" or "4001140" or "3892568" or "3870517" or "3792308" or "3767392" or "3756693" or "3668106" or "3639133" or "2800457" or "20020180687" or "20020171910" or "20020154382" or "20020145792" or "20020131147" or "20020130832" or "20020113770" or "20020106847" or "20020090980" or "20020063677" or "20020063661" or "20020060321" or "20020053900" or "20020021270" or "20020019081" or "20010045934").pn.	USPAT; US-PGPUB	2004/07/15 13:35

17	49	(H0001828 or "6473072" or "6459418" or "6445489" or "6413790" or "6398858" or "6392786" or "6377387" or "6376828" or "6327072" or "6323989" or "6312971" or "6312304" or "6300932" or "6271823" or "6262833" or "6262706" or "6252564" or "6249271" or "6241921" or "6235829" or "6232950" or "6225971" or "6221143" or "6215920" or "6197883" or "6191225" or "6184856" or "6177921" or "6162882" or "6153705" or "6144361" or "6137012" or "6130774" or "6130773" or "6124851" or "6124411" or "6121371" or "6120839" or "6120588" or "6118426" or "6117368" or "6113810" or "6111022" or "6103380" or "6071980" or "6069205" or "6068688" or "6067185" or "6064784").pn.	USPAT; US-PGPUB	2004/07/15 13:39
23	0	(H0001828).pn.	USPAT; US-PGPUB	2004/07/15 13:39
24	1	H0001828	USPAT; US-PGPUB	2004/07/15 13:40
18	50	("6055091" or "6025896" or "6017584" or "5986015" or "5968243" or "5964935" or "5961804" or "5958999" or "5945491" or "5932633" or "5930026" or "5922118" or "5914806" or "5895522" or "5885335" or "5872552" or "5851280" or "5837045" or "5807937" or "5803959" or "5789487" or "5783614" or "5763548" or "5753763" or "5747562" or "5745094" or "5714993" or "5713988" or "5707738" or "5707432" or "5698016" or "5672198" or "5643673" or "5627561" or "5604070" or "5575845" or "5573711" or "5571311" or "5554739" or "5545504" or "5543219" or "5498674" or "5467217" or "5411656" or "5403518" or "5380362" or "5360689" or "5298833" or "5281261" or "5279773").pn.	USPAT; US-PGPUB	2004/07/15 14:12
25	2	"9967678"	EPO; JPO; DERWENT; IBM_TDB	2004/07/15 14:15
26	866	"9967678" "9953373" "9951690" "9533085" "0221201" "0192359" "0117041" "0117029" "0108241" "0107961" "0067327" "0067110" "0038001" "0038000" "0036666" "0036560" "0026761" "0022051" "0020922" "0005704" "0005312"	EPO; JPO; DERWENT; IBM_TDB	2004/07/15 14:16
27	2	WO near "9967678"	EPO; JPO; DERWENT; IBM_TDB	2004/07/15 14:16
28	9	wo near ("9967678" "9953373" "9951690" "9533085" "0221201" "0192359" "0117041" "0117029" "0108241" "0107961" "0067327" "0067110" "0038001" "0038000" "0036666" "0036560" "0026761" "0022051" "0020922" "0005704" "0005312")	EPO; JPO; DERWENT; IBM_TDB	2004/07/15 14:16
29	9	wo near2 ("9967678" "9953373" "9951690" "9533085" "0221201" "0192359" "0117041" "0117029" "0108241" "0107961" "0067327" "0067110" "0038001" "0038000" "0036666" "0036560" "0026761" "0022051" "0020922" "0005704" "0005312")	EPO; JPO; DERWENT; IBM_TDB	2004/07/15 14:18

**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

B20

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>C09B 69/00, 67/22, C09D 11/02, 11/00, G03F 1/00</b>		<b>A1</b>	(11) International Publication Number: <b>WO 99/51690</b> (43) International Publication Date: <b>14 October 1999 (14.10.99)</b>
(21) International Application Number: <b>PCT/US99/07461</b> (22) International Filing Date: <b>2 April 1999 (02.04.99)</b> (30) Priority Data: <b>60/080,598</b> <b>3 April 1998 (03.04.98)</b> <b>US</b> (71) Applicant: <b>CABOT CORPORATION [US/US]; 75 State Street, Boston, MA 02109-1806 (US).</b> (72) Inventors: <b>JOHNSON, Joseph, E.; 9 Ayer Street, Nashua, NH 03062 (US). BIAN, Nanyang; 8 Turnbridge Drive, Nashua, NH 03062 (US). GALLOWAY, Collin, P.; Apartment K, 44 Bay Drive, Nashua, NH 03062 (US).</b> (74) Agents: <b>LANDO, Michelle, B.; Cabot Corporation, Biller- ica Technical Center, 157 Concord Road, Billerica, MA 01821-7001 (US) et al.</b>			(81) Designated States: <b>AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</b>  <b>Published</b> <i>With international search report.</i>
(54) Title: <b>MODIFIED PIGMENTS HAVING IMPROVED DISPERSING PROPERTIES</b>			
(57) Abstract  Various modified pigment products are described which are preferably capable of being dispersed in a variety of materials such as coatings, inks, toners, films, plastics, polymers, elastomers, and the like. The modified pigments are pigments having attached groups, such as polymeric groups, onto the pigment by means other than adsorption. A modified pigment product is described comprising a pigment having attached at least one group comprising the formula: $-X-(Nlon)_pR$ , wherein X comprises an aromatic group or an alkyl group, Nlon comprises at least one type of non-ionic group, R represents hydrogen or comprises an aromatic group or an alkyl group, and p represents an integer of from 1 to 500. Modified pigment products are also described comprising a pigment having attached at least one alkylene oxide group or at least one polymeric group. In addition, other types of modified pigment products are described as well as their incorporation into inks, coatings, toners, films, plastics, polymers, elastomers, and the like. Methods of making the modified pigment products are also described.			